REMARKS

Claims 1-28 remain in the application including independent claims 1, 15, and 18. New claims 29-40 have been added.

35 USC 112

Claims 27-28 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 27 and 28 have been amended to clarify the unclear features. Applicant believes that all 35 U.S.C. 112 rejections have now been overcome.

35 USC 103(a)

Claims 1-12 and 15-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Steffens, Jr. et al. ('359) in view of Stanley ('627).

Claim 1 includes the feature of at least one modifier sensor that generates a modifier signal to enable or disable an occupant restraint system. The method claim 18 includes a similar feature of generating at least one modifier signal to enable or disable an occupant restraint system based on satisfaction of a predetermined condition. The base reference, Steffens '359, does not disclose such a feature.

Steffens operates in a very different manner then Applicant's invention as set forth in the claims. Steffens does not disable any portion of the restraint system upon detection of an appropriate modifier signal. For example, as shown in Figure 4, at step 202 the system determines whether or not the occupant is belted to the seat. If the answer is NO then the system proceeds to determine occupant weight, position, etc. and then adjusts seatbelt and airbag systems. The Steffens reference does not teach disabling the safety restraint/seatbelt mechanism if the occupant is not belted to the seat. As a further example, the Steffens reference does not teach disablement of the airbag when a rearward facing child seat is detected.

The Examiner admits that Steffens does not disclose a child seat sensor and uses Stanley in combination with Steffens to achieve an overall system with a child seat sensor. The Stanley

system does not include a separate child seat sensor as claimed by Applicant but instead uses occupant presence and position sensors to attempt to identify the presence and position of a child seat. The Stanley system cannot uniquely identify the presence of a child seat in all possible installed positions.

Stanley uses a transmitter/receiver subsystem 20 to determine whether or not an occupant is present on the seat and uses a range/proximity sensing subsystem 30 to determine the position of the occupant on the seat. The transmitter 22 and receiver 24 are located so that a rear facing infant seat does not block the line of sight between those components, but that a normally seated forward facing occupant always will block that same line of sight, col. 11, lines 15-54. Thus, when the line of sight is not blocked, a rearward facing child seat is identified. Alternatively, the airbag is disabled if the range/proximity sensing subsystem detects a rear facing child seat in the at-risk zone 34, col. 12, lines 4-6. Using the occupant presence and occupant position sensors alone, as taught by Stanley, cannot be equated to a child seat sensor because the system will not identify the presence of a child seat in all possible installation positions. For example, Stanley cannot detect a forward facing child seat. A child seat that is installed in a forward facing position will block the line of sight between the transmitter 22 and the receiver 24 and further will not be detected as being present in the at-risk zone. Thus, there is no way to differentiate between a forward facing child seat and an adult seated on the seat in Stanley. Thus, the combination of Steffens and Stanley does not teach an occupant restraint system as claimed by Applicant.

Claim 15 is allowable over the combination of Steffens and Stanley for the reasons discussed above. Further, claim 15 includes the combination of a plurality of collision sensors including a severity sensor for generating a severity signal indicating collision characteristics occurring at the time of or just after collision and a pre-collision sensor for generating a pre-collision signal indicating vehicle characteristics occurring just before collision. The crash sensor 90 of Steffens only determines vehicle characteristics at the time of the collision, col. 3, line 64 to col. 4, line 11. The Examiner cites col. 3, lines 1-67 as teaching the generation of a

pre-collision signal indicating vehicle characteristics before collision, however, the material referred to at col. 3, lines 1-67 only indicates *occupant characteristics* prior to collision, not vehicle characteristics.

Claims 13, 14, and 22-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Steffens, Jr. et al. ('359) in view of Stanley ('627) and further in view of Gille ('013). For the reasons, discussed above, the combination of the Steffens and Stanley references do not teach the system as claimed by Applicant. The deficiencies in Steffens and Stanley are also not shown in Gille.

As discussed above, Claims 27-28 currently stand rejected under 35 U.S.C. 112, second paragraph, but do not currently stand rejected on any prior art of record. Applicant has amended claims 27-28 to overcome the 35 U.S.C. 112 rejections, thus claims 27-28 should now be in condition for allowance.

A supplemental information disclosure statement and the appropriate fee are being submitted separately, including references cited in the PCT Search Report. One of the references is a report entitled "Advanced Air Bag Technology Assessment – Final Report" authored by Phen et al. This reference summarizes various components used in occupant restraint systems and discusses the benefits and disadvantages of each component. However, this report does not disclose, teach, or suggest a system or method of controlling an occupant restraint system as claimed by Applicant. Further, this report does not disclose, suggest, or teach the specific combination of sensors and procedural steps to determine under which conditions the occupant restraint systems should be enabled or disabled as claimed by Applicant.

Another reference, DE 19753163, uses fuzzy classifiers such as change in vehicle speed and acceleration characteristics to form triggering criterion for deployment of a restrain system. The DE reference does not disclose a fuzzy logic system based on multiple occupant characteristics as claimed by Applicant.

Another reference, WO 9854638, uses a neural network to use compiled information on different types of collisions to determine deployment decisions for the current collision event. WO 9854638 does not disclosure the use of a neural network to identify different vehicle types and various passenger compartment sizes as claimed by Applicant.

For the reasons set forth above, all claims should be allowed. An indication of such is requested. The Commissioner is authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds for any additional claim fees.

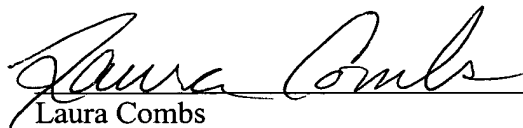Respectfully submitted,

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CERTIFICATE OF MAIL

I hereby certify that the enclosed Amendment is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to Assistant Commissioner of Patents, Washington D.C. 20231 on this 19th day of October, 2001.

Laura Combs

APPENDIX A

Claims

(Version With Markings to Show Changes Made)

27.   (Amended)   A method as set forth in claim 18 including utilizing a fuzzy logic analysis process to generate the output signal based on the plurality of input signals before step (e) wherein the fuzzy logic analysis process includes the steps of creating membership functions by assigning each non-modifier signal [names] to one of a plurality of predetermined values within a designated range for each function; designating rules to be applied to the input signals and membership functions; evaluating the rules and input signals to form an optimal control decision; and translating the optimal control decision into the output signal.

28.   (Amended)   A method as set forth in claim 18 including the step of [programming the processing unit with a neural network for] learning vehicle characteristics unique to vehicle type and size by using a neural network.